



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2017-0806; Product Identifier 2017-NM-064-AD; Amendment 39-19216; AD 2018-05-07]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for all The Boeing Company Model 787-8 and 787-9 airplanes. This AD was prompted by a flight test report indicating that the crew oxygen masks in the flight deck did not deploy correctly. This AD requires an inspection at four locations in the flight deck to determine whether any crew oxygen mask having a certain part number is installed, and replacement of affected crew oxygen masks. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For service information identified in this final rule, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>. You may view this service

information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0806.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0806; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Docket Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Susan L. Monroe, Aerospace Engineer, Cabin Safety and Environmental Systems Section, Seattle ACO Branch, FAA, 2200 South 216th St., Des Moines, WA; phone: 206-231-3570; email: susan.l.monroe@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to all The Boeing Company Model 787-8 and 787-9 airplanes. The NPRM published in the Federal Register on August 28, 2017 (82 FR 40735). The NPRM was prompted by a flight test report indicating that the crew oxygen masks in the flight deck did not deploy correctly. The NPRM proposed to require an inspection at four locations in the flight deck to determine whether any crew oxygen mask having a certain part number is installed, and replacement of affected crew oxygen

masks. We are issuing this AD to prevent the oxygen mask harness from getting caught in the oronasal mask or goggles, which may lead to flight crew hypoxia and the loss of useful consciousness, possibly resulting in loss of control of the airplane.

Comments

We gave the public the opportunity to participate in developing this final rule. The following presents the comments received on the NPRM and the FAA's response to each comment.

Support

In addition to the comments described below, Air Line Pilots Association, International (ALPA) agrees with the intent of the proposed subject AD, and United Airlines (UAL) provided support for the NPRM, stating that the proposed changes are clear and easily understood, with an acceptable compliance time line.

Requests to Change or Delete Parts Installation Prohibition Language

All Nippon Airways (ANA) and Japan Airlines (JAL) asked that the prohibition of affected parts, specified in paragraph (h) of the proposed AD, "Parts Installation Prohibition," apply after 72 months after the effective date of the AD, instead of "as of the effective date of this AD." ANA and JAL stated that the supply of spare parts having part number (P/N) MF40-45-02 is insufficient worldwide.

UAL asked that paragraph (h) of the proposed AD, "Parts Installation Prohibition," be deleted in its entirety, and that the proposed AD simply mandate replacement of all affected masks within 72 months from the effective date of the AD. UAL objected to this paragraph as written because it would result in the unintended consequence of restricting operators to replacing the oxygen masks one at a time, which would allow an intermixing of both MLD20 and MF40 series masks in any of the four locations on any given aircraft. UAL noted that since these masks are operationally different, intermixing the masks is not desirable, even with extensive flight crew training

on both mask types. UAL added that in order to mitigate any potential risk due to pilot confusion with the parts differences, replacing the entire shipset of masks at once eliminates the potential for error caused by replacing one mask at a time.

Boeing asked that paragraph (h) of the proposed AD, “Parts Installation Prohibition,” be changed to read: “As of the effective date of this AD, no person may install a crew oxygen mask having P/N MLD20-626-1, in place of a crew oxygen mask having P/N MF40-45-02, on any Model 787 series airplane.” Boeing stated that as noted in the NPRM, the affected parts are rotatable parts, and these parts could frequently be removed and re-installed on airplanes for a variety of reasons. Boeing added that allowing the replacement of one oxygen mask having P/N MLD20-626-1 with another oxygen mask having P/N MLD20-626-1 until accomplishment of the required actions will avoid any unnecessary disruption caused by replacing rotatable parts, such as a crew oxygen mask having P/N MLD20-626-1 found in unserviceable condition prior to dispatch or prior to completion of the terminating action steps required for compliance. Boeing concluded that revising paragraph (h) of the proposed AD would prevent the proliferation of oxygen masks having P/N MLD20-626-1, while still allowing operators the flexibility to replace rotatable parts until the terminating action in the proposed AD has been done.

We agree to change paragraph (h) of this AD, “Parts Installation Prohibition,” because of the need for dispatch relief. While we acknowledge all of the commenters’ requests and concerns, we have revised this provision specific to situations when dispatch relief is warranted. We have revised paragraph (h) of this AD to allow installation of an affected oxygen mask only when the mask is replacing another affected mask, and only when the action of replacing the mask is done as unscheduled maintenance. Unscheduled maintenance is defined as maintenance that was not planned for or scheduled in advance, such as changing a defective or unserviceable oxygen mask at dispatch. If a different

(unaffected) mask is already installed, an operator may not replace it with an affected mask. The supplier has informed us that no parts availability issues are expected.

Request to Reduce Compliance Time

ALPA suggested reducing the compliance time from 72 to 36 months. ALPA stated that 72 months is excessive considering the limited number of airplanes on the market and the ease of the inspection. ALPA added that 36 months would be more appropriate.

We disagree with the commenter's request to reduce the compliance time. In developing an appropriate compliance time, we considered the safety implications, parts availability, and normal maintenance schedules for timely accomplishment of replacement of the oxygen masks. Further, we arrived at the proposed compliance time with the manufacturer's concurrence. In consideration of all of these factors, we have determined that the compliance time, as proposed, represents an appropriate interval in which the oxygen masks can be replaced in a timely manner within the fleet, while still maintaining an adequate level of safety. Operators are permitted to accomplish the requirements of an AD at a time earlier than the specified compliance time; therefore, an operator may choose to replace the oxygen masks before reaching 72 months after the effective date of this AD. If data are presented that would justify a shorter compliance time, we might consider further rulemaking on this issue. We have not changed this AD in this regard.

Request to Clarify Applicability

ANA asked that we clarify whether the actions in the proposed AD apply to all airplanes, as specified in paragraph (c) of the proposed AD, or only to the airplanes identified in paragraph (g) of the proposed AD. ANA stated that paragraph (g) of the proposed AD would apply to airplanes with an original certificate of airworthiness or original export certificate of airworthiness issued on or before the effective date of this

AD. ANA added that it is uncertain of which actions are required for airplanes not identified in paragraph (g) of the proposed AD.

We acknowledge the commenter's concern and agree to clarify. Paragraph (g) of this AD only applies to the airplanes identified therein. The "Parts Installation Prohibition" specified in paragraph (h) of this AD applies to all airplanes identified in paragraph (c) of this AD. In addition, paragraph (h) has been revised, as noted above. We have not changed this AD in this regard.

Statement Regarding Training for Packing Oxygen Masks

Zodiac Aerospace Oxygen Systems Division stated that it recommends that all individuals packing the oxygen masks be properly trained and checked periodically on procedures. Zodiac offered to provide this training to all operators. Zodiac stated that proper stowage of all crew oxygen masks and hoses is essential to ensure that the mask can be donned within the mandated 5-second period. Zodiac added that instructions are provided with the masks for every Boeing Model 787-8 and 787-9 airplane. Zodiac concluded that if these instructions are followed, no equipment change should be required, contrary to what would be required by the proposed AD.

We acknowledge the commenter's offer to provide training; however, the supplier had previously provided mask-packing training to Boeing, and the masks that failed were packed by trained, certified mask packers. Given that trained, certified mask packers packed and installed the oxygen masks that failed, we have determined that mandating a design change is necessary to effectively mitigate the unsafe condition. Therefore, we have not changed this AD in this regard.

Request to Provide Statement of Relief for Airplanes with Unaffected Masks

ANA asked that we clarify paragraph (g) of the proposed AD by stating that if no oxygen mask having P/N MLD20-626-1 is installed at the four locations, there is no further action.

We do not agree with the commenter's request. We acknowledge that if no oxygen mask having P/N MLD20-626-1 is found, no further action is required by paragraph (g) of this AD. However, operators must still address the actions specified in paragraph (h) of this AD, "Parts Installation Prohibition." This AD specifies only those actions required to address the unsafe condition. Therefore, we have not changed this AD in this regard.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this final rule with the changes described previously and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this final rule.

Related Service Information under 1 CFR part 51

We reviewed Boeing Service Bulletin B787-81205-SB350007-00, Issue 001, dated May 9, 2017. The service information describes procedures for replacing the crew oxygen masks at four locations in the flight deck. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Costs of Compliance

We estimate that this AD affects 57 airplanes of U.S. registry. We estimate the following costs to comply with this AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection	1 work-hour X \$85 per hour = \$85	\$0	\$85	\$4,845
Replacement	Up to 4 work-hours X \$85 per hour = \$340	Up to \$36,800	Up to \$37,140	Up to \$2,116,980

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes to the Director of the System Oversight Division.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

2018-05-07 The Boeing Company: Amendment 39-19216; Docket No. FAA-2017-0806; Product Identifier 2017-NM-064-AD.

(a) Effective Date

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all The Boeing Company Model 787-8 and 787-9 airplanes, certificated in any category.

(d) Subject

Air Transport Association (ATA) of America Code 35, Oxygen.

(e) Unsafe Condition

This AD was prompted by a flight test report indicating that the crew oxygen masks in the flight deck did not deploy correctly. We are issuing this AD to prevent the oxygen mask harness from getting caught in the oronasal mask or goggles, which may lead to flight crew hypoxia and the loss of useful consciousness, possibly resulting in loss of control of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Oxygen Mask Inspection and Replacement

For airplanes with an original certificate of airworthiness or original export certificate of airworthiness issued on or before the effective date of this AD: Within 72 months after the effective date of this AD, do an inspection to determine whether any crew oxygen mask having part number (P/N) MLD20-626-1 is installed at the four locations identified in Boeing Service Bulletin B787-81205-SB350007-00, Issue 001, dated May 9, 2017. A review of airplane maintenance records is acceptable in lieu of this inspection if the part number of the crew oxygen mask can be conclusively determined

from that review. If any crew oxygen mask having P/N MLD20-626-1 is found installed, within 72 months after the effective date of this AD, do all applicable actions identified as “RC” (required for compliance) in, and in accordance with, the Accomplishment Instructions of Boeing Service Bulletin B787-81205-SB350007-00, Issue 001, dated May 9, 2017.

(h) Parts Installation Prohibition

(1) For airplanes with an original certificate of airworthiness or original export certificate of airworthiness issued on or before the effective date of this AD: As of the effective date of this AD, no person may install a crew oxygen mask having P/N MLD20-626-1 on any airplane, except as provided in this paragraph. Within 72 months after the effective date of this AD, installation of a crew oxygen mask having P/N MLD20-626-1 is acceptable when the action of replacing the mask is done as unscheduled maintenance, and as a replacement only for another crew oxygen mask having P/N MLD20-626-1. For the purposes of this AD, unscheduled maintenance is defined as maintenance that was not planned for or scheduled in advance, such as changing a defective or unserviceable oxygen mask at dispatch.

(2) For airplanes with an original certificate of airworthiness or original export certificate of airworthiness issued after the effective date of this AD: As of the effective date of this AD, no person may install a crew oxygen mask having P/N MLD20-626-1 on any airplane.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in

paragraph (j) of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO Branch, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(4) For service information that contains steps that are labeled as RC, the provisions of paragraphs (i)(4)(i) and (i)(4)(ii) of this AD apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, must be done to comply with the AD. If a step or substep is labeled “RC Exempt,” then the RC requirement is removed from that step or substep. An AMOC is required for any deviations to RC steps, including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator’s maintenance or inspection program without obtaining approval of an AMOC, provided the RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition.

(j) Related Information

For more information about this AD, contact Susan L. Monroe, Aerospace Engineer, Cabin Safety and Environmental Systems Section, Seattle ACO Branch, FAA, 2200 South 216th St., Des Moines, WA; phone: 206-231-3570; email: susan.l.monroe@faa.gov.

(k) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Boeing Service Bulletin B787-81205-SB350007-00, Issue 001, dated May 9, 2017.

(ii) Reserved.

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>.

(4) You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to:
<http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Renton, Washington, on February 22, 2018.

Jeffrey E. Duven,
Director,
System Oversight Division,
Aircraft Certification Service.
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